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# A STUDY ON TRANSITION THROUGH COMMUNICATION TECHNOLOGY IN DEVELOPING COUNTRIES

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**ABSTRACT**

Public sector and private sector organizations around the world are facing to reform their public administration organizations and deliver more efficient and cost effective services, as well as better information and knowledge to their stakeholders. E-governance is an effective tool with the use of Information & Communication Technology (ICT) to improve the system of governance that is in place, and thus provide better services to the Citizens. E-Governance is considered as a high priority agenda in India, as it is considered to be the only means of taking IT to the "Common Public". Developments in e-Governance provide opportunities to control the power of Information and Communication Technology (ICT) to make the business of governance inexpensive, qualitatively responsive, and truly encompassing. In the present study effort has been made to identify the e-governance system in India, Malaysia & Singapore. It is to define communication technology, and to analyze the impact of communication technology in business, society and government in India.



## INTRODUCTION

Communication technology plays a vital role in human life by acquiring and disseminating information. Communication technology is an indication for human civilization. Information and Communication Technologies (ICTs) play a key role in

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Development & Economic growth of the Developing countries of the World. Political, Cultural, Socio-economic Developmental & Behavioral decisions today rests on the ability to access, gather, analyze and utilize Information and Knowledge. Government of India is having an ambitious objective of transforming the citizen-government interaction at all levels to by the electronic mode by 2020.

Similarly according to the Vision 2020-The Way Forward presented by His Excellency YAB Dato' Seri Dr Mahathir Mohamad at the Malaysian Business Council "By the year 2020, Malaysia can be a united nation, with a confident Malaysian society, infused by strong moral and ethical values, living in a society that is democratic, liberal and tolerant, caring, economically just and equitable, progressive and prosperous, and in full possession of an economy that is competitive, dynamic, robust and resilient". This paper presents a comparative study and review relating to e-Governance and application of ICT development between India, Malaysia & Singapore.

Singapore has successfully developed a strong foundation for e-Government. Many strengths and opportunities fuel the development of e-Government in Singapore such as sound economic policies, political willingness, robust educational system to generate tech-savvy future employees and low cost of phone calls.

Present study presents a comparative study and review relating to e-Governance and application of ICT development between India, Malaysia & Singapore.

The term governance comes from an ancient Greek word, kebernon, which means to steer. Present day the usage, to govern means to guide, to control, and to influence from a position of authority. Therefore, governance is an exercise of power for steering social systems, as well as a process by which organizations are directed, controlled, and held to account to their society. It is a set of the systems and processes concerned with ensuring the overall direction, effectiveness, supervision and accountability of an organization. E-Governance involves new styles of leadership, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens and new ways of organizing and delivering information and services.

**1.1 The Goals of e-Governance are**

a. Better service delivery to citizens
b. Ushering in transparency and accountability
c. Empowering people through information
d. Improved efficiency within Governments
e. Improve interface with business and industry.

E-Governance is taking active part in transform all levels of Government but the focus should be on local governments since local governments are the closest to citizens, and constitute for many, the main interface with government. The relationship of citizens and local authorities tends to be one based on proximity as the interests at stake for both parties are closely entwined concerning issues such as public services, local development, education etc. e-Governance based administrative reforms in local governments can have maximum impact on citizens.

The benefits of information technology have not been evenly distributed. It has been noticed that most of the time the benefits of e-Governance are also reaped by the affluent

sections of society. Therefore a concerted effort has to be made to direct e-Governance reforms towards the common man.

E-Government is not about 'e' but about 'government'; it is not about computers and websites, but about services to citizens and businesses. E-Government is also not about translating processes; it is about transforming them. E-Government is concerned with the transformation of government, modernization of government processes and functions and better public service delivery mechanisms through technology so that government can be put on an auto-pilot mode.

The four pillars of e-Government are:

- People
- Process
- Technology
- Resources

The challenges in e-Governance have been described as centered on for key areas viz. people, process, technology and resources. The key considerations in e-Governance are described below:.

### 1.2. e-Governance Imperatives

**Table 1**

| **Process** | **Simplicity** | **Efficiency** | **Citizen** | **Sustainability** | **Cost-centricity** |
|---|---|---|---|---|---|
| People | Vision | Leadership | Commitment | Competency | Change |
| Technology | Architecture | Open Standards | Reliability | Scalability | Security |
| Resources | Holistic | Efficient | Service-oriented | Sustained | Adequate |

The advances in information and communications technologies and the internet provide opportunities to transform the relationship between governments and citizens and business in new ways that contribute to the attainment of good governance. They provide opportunities for people and business to involve themselves in the process of governance at all levels. They facilitate better service delivery to clients, in terms of timelines and quality.

### 1.3 Definition of Communication Technology

Rogers (1991) defines, "communication technology as the equipment, the structure of an organization and the social values that have been experienced by individuals when collecting, processing and exchanging information with other individuals."

Zeuschener (1997) defines, "information technology as a body of tools, machines, materials, techniques and processes used in human interaction for sending and receiving messages."

Marcell (2000) defines, "information technology as a "complex and heterogeneous set of goods, application and services used for producing, distributing, processing and transforming information."

Akhtar, Kumar and Gregson (2000) says, "Information and communication technology include satellite broadcasting networks, televisions, video, digital radio, internet,

extranets, wireless communication devices, as mobile phones etc." All these play an important role in connecting the people of the world and enabling an effective communication process.

### 1.4 Objectives of the Study

1. To outline the usage and impact of ICT in Governance.
2. To study the current status of ICT and E-Governance in comparison with different countries.

### 1.5 Purpose of the Study

ICT is bringing modernization and innovation trend in developed countries of the World accelerating forward as compared with developed countries. ICT's use to induce changes in governance presents a big potential in opening up governance processes, but it should be preceded by good governance foundations. Traditional governance processes, which have already been impeded by lack of citizen's participation, poor performance of government services, lack of accountability and transparency, have to be revitalized in conjunction with the introduction of electronic governance mechanisms. The legislature, judiciary and administration may apply e-governance, in order to improve internal efficiency, the delivery of public services, or processes of democratic governance. It also refers to the citizen to government interface including the feedback of policies. At the same time, citizens have to undergo a mind-set change, overcome the "culture of fear" or the "culture of non-confrontation" skepticism and lack of communal involvement in seeing to the welfare of the society.

"E-governance is the application of information & communication technology to transform the efficiency, effectiveness, transparency and accountability of informational & transactional exchanges with in government, between govt. & govt. agencies of National, State, Municipal & Local levels, citizen & businesses, and to empower citizens through access & use of information". In other words e- Governance is the implementation and delivery of government services through the information communication technology to provide Transparent, Effective, Efficient, Responsive and Accountable governance to the society.

**Table 2**

| **ICT usage in various countries** | | | |
|---|---|---|---|
| **Country** | **PC's/100** | **Telephone lines/100** | **Internet Users/100** |
| India | 2.76 | 3.37 | 6.93 |
| Canada | 94.58 | 55.48 | 76.77 |
| UK | 81.21 | 55.43 | 66.15 |
| USA | 79.89 | 53.35 | 71.94 |
| Australia | 75.70 | 47.05 | 54.19 |
| Singapore | 72.61 | 41.91 | 69.99 |
| Newzealand | 54.15 | 40.83 | 80.41 |

**Source:** *Source: World Economic Forum, Executive Opinion Survey 2007, 2008*

Through e-Governance there is a possibility to solve the social as well as economical problems exist in the developing countries like India. Government of India is having an ambitious objective of transforming the citizen-government interaction at all levels to by the electronic mode (e-Governance) by 2020.

## METHODOLOGY

The present study is emphasizing on the issues related to E-governance. The nature of governance often changes depending on the intensity and speed of transition in some of these surrounding factors. In this regard it is proposed to study based on the secondary data. Present study is emphasizing on the issues related to the impact of information and communication technology (ICT) on governance.

### 2.1 Review of Literature

In the current age, one of the most significant contextual phenomena affecting public governance is the revolution in information and communication technology (ICT). Internationally, this revolution in ICT has facilitated the globalization of the economy, business, finance and culture (Berleur, 1997; Heeks, 1999). In the context of governance, in almost every country, the state has taken the necessary initiatives to restructure political and administrative institutions by adopting ICT in order to enhance electronic interaction and service delivery (Menzel, 1998; Galbi, 2001).

Different factors have influenced the businesses operations today; one of the biggest factors is certainly technology (Keen 2000; Lin & Shao 2006). Today technology has enabled new business models and ways of working with secure, easily accessible, communications channels (broadband and wireless) and new platforms for collaboration with the likes of Web 2.0 (Balutis 2009). As a result, there are potentially many opportunities for new sources of competitive advantage to the developed countries when considering information communication technology investments.

## GOVERNMENT INITIATIVES

In India the policy-makers be liable to substantiate, how e-governance reduces the costs, control over the waste, the adoption and expansion of e-governance on the grounds that it costs less, reduces waste, eradicate corruption, promotes transparency, creating ways to rural issues by way to rule out poverty and promoting promising future for a citizens generates possibilities to resolve rural poverty and inequality, and guarantees a better future for citizens in India. In other words government tends to portray e-governance as the solution for all ranges of problems confronting India; therefore Indian Government has set the target of delivering at least 25 percent of its dealings and services electronically. To achieve the target Indian Government has decided to boost computer density by making computers easily affordable; to increase connectivity by improving the telecommunication based on optical fiber networks.

Indian government has taken major initiatives to setup institutions for making policy, control and account deployment of e-Governance which will provide effective and efficient services. One of the most important initiatives undertaken by the central government is the Information Technology Act (2000), which is to regulate cyberspace and

define offences and penalties related to information technology (IT) such as tampering with computer source documents, breach of confidentiality and privacy, publication of false digital signatures and so on.

- Ministry of Information Technology (MIT) plays a crucial role in facilitating e-governance by reinforcing knowledge based enterprises, encouraging coordination among users, adopting procedures based on international standards, promoting the internet and introducing it education.
- The Government has also decided to establish a National Institute of Smart Government in order to enhance capacity-building in e-Governance at all administrative levels.
- Centre for Electronic Governance to promote IT and e-governance in the country which is to identify the appropriate forms of ICT necessary for better service delivery, to conduct training for generating it awareness among government officials and to help state governments in implementing policies and reforms based on best e-governance practices.
- NeGP National e-Governance Projects (NeGP) make all Government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency & reliability of such services at affordable costs to realize the basic needs of the common man. Indian Government has committed around 23 Crores for overall development for five year plan in 2006. In addition, various ministries and departments organizes summit, other mechanism to raise awareness programs to make varieties of information available to citizens through electronic links.

Governance refers to the process of interaction among the Government, Business, and Civil society to manage their Political, Social and Economic environment.

There are six dimensions of Governance:

i. Voice & Accountability
ii. Political Stability and Lack of Violence/Terrorism
iii. Government Effectiveness
iv. Regulatory Quality
v. Rule of Law, and
vi. Control of Corruption

**3.1 e-Governance in India**

E-Governance initiative in India is in the form of computerizing all Government Departments. Present e-Governance initiatives encapsulating the finer points of Governance such as Citizen Centricity, Service Orientation & Transparency.

In the 1990s India began to apply several communication technology initiatives such as e-governance, telecommunication, and telemedicine, e-commerce, and community information centers while promoting access to the Internet to bring economic benefits to the people. The applications of ICTs for e-governance in rural development can be classified as those that

1. To provide decision support to public administrators for improving planning and monitoring of developmental programs;
2. To improve service to citizens and enable transparency;

3. For empower citizens through access to information and knowledge; and
4. To train developmental organizations to improve their functions and expand employment opportunities in rural areas.
5. India's experience in e-governance/ICT initiatives has demonstrated significant success in improving accessibility, cutting down costs, reducing corruption, and increasing access to unserved groups.

Government of India approved the National e-Governance Plan (NeGP) [3] on 18th May 2006. E-governance is seen as a vehicle to initiate and sustain reforms by focusing on three broad areas:

**Governance:** Transparency; people's participation; promotion of a democratic society.

**Public services:** Efficient, cost-effective and responsive governance; convenient services to citizens and businesses; greater citizen access to public information; accountability in delivery of services to citizens.

**Management:** Simplicity, efficiency and accountability; managing voluminous information and data effectively; information services; swift and secure communication.

### 3. 2 ICT in Malaysia

Malaysia's e-Government initiative was launched to improve government internal operations, that is, the speed and quality of policy produced, coordinated, enforced and implemented. Secondly, the initiative aimed to enhance the convenience and accessibility of interactions between government and citizens, and between government and businesses. In line with this aim, government therefore must improve its internal communications, and this is allied to many elements, some of which are infrastructure, telecommunication lines, human factors such as skill and culture, organizational structure, and institutional factors, such as understanding between agencies.

The government has spent approximately US$9 billion of public funds to develop the country's IT infrastructure and amenities (EPU, 2006).

To meet the objectives of Vision 2020, the government designed rout has been defined through 7(seven) innovative Flagship Applications. Government agencies are working along with local and foreign companies to increase the socio-economic development of Malaysia. Flagship Applications of Multimedia Super Corridor of Malaysia are:

i. Electronic Government
ii. Multipurpose Card
iii. Smart School
iv. Tele-health
v. R&D Clusters
vi. E-Business
vii. Technopreneur Development

Under the e-Government flagship, seven main projects were identified to be the core of the e-government applications. The e-Government projects are:

i. Electronic Procurement (eP)
ii. Project Monitoring System (PMS)
iii. Electronic Services Delivery(eServices)
iv. Human Resource Management Information System (HRMIS)

v. Generic Office Environment (GOE)
vi. E-Syariah and
vii. Electronic Labour Exchange (ELX).

Besides these seven main projects under e-government flagships, several government agencies has taken initiatives to introduced online services for the public projects, aims to increase the ease and efficiency of public service to the people.

Among others were Public Services Portal (my Government), e-Tanah, e-Consent, e-Filing, e-Local Government (e-PBT), e-Kehakiman, Custom Information System (SMK), Pensions Online Workflow Environment (POWER), and Training Information System (e-SILA).

**3.3 e-Government in Singapore**

Singapore governance is known for Rapidity, Reliability, Efficiency, Cost-effectiveness, Customer-orientation and Accessibility are the main guidelines for the development of e-government in Singapore in order to provide quality services to users in the digital economy.

Singapore has successfully developed a strong foundation for e-Government. Many strengths and opportunities fuel the development of e-Government in Singapore such as sound economic policies, political willingness, robust educational system to generate tech-savvy future employees and low cost of phone calls. Singapore has continuously improved in order to prepare to deal with new threats and challenges such as the significant increase in the number cyber crimes, security and privacy concern.

There are five thrusts and six programs of e-governance in Singapore. The development of e-Government involves three main relationships: Government to Citizen (G2C), Government to Business (G2B) and Government to Employees/Public Servants (G2E).

The Singaporean Government claims to have created a world-class e-Government that enables citizens to be involved, be empowered, and be a pacesetter. Infocomm Development Authority of Singapore (IDA) 2000). Residents in Singapore are thus said to have equal opportunities to be involved in and to access e-Services and e-Users, to be empowered through IT knowledge and skills, through online feedback, by being treated as customers and by being able to set their own pace and time for accessing e-Services.

The concept of e-Government is enhanced by the vision of the Singaporean government, which is to become a world leader in e-Government and to better serve the community and the nation (IDA 2004). The Singaporean government has engaged e-Government to re-examine(s) the organising principles of bureaucracy and governance, re-define(s) the objectives and deliverables of government and re-deploy(s) the resources available. (Mahizhnan and Andiappan 2002: 250)

The objectives of e-Government in Singapore are integrated in the acronym C.A.R.E., which according to the Infocom Development Authority of Singapore (IDA) website stands for the following:

1. **C stands for *Courtesy.*** The Singaporean government provides public services with a client-centric approach that pleases customers (Tran 2003). Traditionally, the public felt indebted to civil servants whenever they were in need of services. Now, e-Users are treated as valuable customers who buy services from the government.

Government agencies have transformed themselves into service providers who have to attract customers with better quality services and cheaper prices. Red-tape and bureaucracy have been minimized in order to change the mindset of the public when it needs interacts with government officials.

2. **A stands for *Accessibility.*** E-Users can be connected to any government website at any time, any place, and for any purpose. E-Government should be a public good, with the qualities of non-exclusion and non-rivalry. No one is excluded from the services rendered and every user enjoys the same level of satisfaction when .consuming. These services, no matter who they are, when they use them or where they are located. However, accessibility depends on the availability of human and physical resources. Therefore, the government has to make special efforts to bring e-Services to all stakeholders, rather than wait for the public to approach government agencies to avail of them.
3. **R stands for *Responsiveness.*** Government must be willing to listen to e-Users, be transparent and be accountable in terms of policy making, implementing, monitoring and modifying. It needs to meet the new demands of e-Users by providing new and better online services.
4. **E refers to *Effectiveness.*** E-Services must be reliable, secure, free from problems, and able to save resources. Different government bodies can share the same resources, and e-Users can use the same password (Sing Pass) 2 to communicate with all government agencies (IDA 2003).

Various programmes are developed to address the ICT requirements for the government in the above-mentioned areas over the next five years.

## ICT DEVELOPMENT INDEX ACROSS THE VARIOUS COUNTRIES IN 2011

The ICT Development Index (IDI) is a composite index combining 11 indicators into one benchmark measure that serves to monitor and compare developments in Information and Communication Technology (ICT) across various countries. The main objectives of the IDI are to measure:

The ICT Development Index (IDI) is a composite index combining 11 indicators into one benchmark measure that serves to monitor and compare developments in Information and Communication Technology (ICT) across various countries. The main objectives of the IDI are to measure:

- The *level and evolution over time* of the ICT developments in countries and in relative to other countries
- The *digital divide*, i.e. differences between countries with different level of ICT developments
- The *development potential* of ICTs or the extent to which countries can make use of ICTs to enhance growth and development, based on capabilities and skills.

The indicators are categorized into 3 sets of sub-indices namely:

1. ICT Access – reflecting the level of networked infrastructure and access to ICTs
2. ICT Use – reflecting the level of use of ICTs in the society
3. ICT skills – reflecting the ICT capability and skills required to use ICT effective.

**Table 3**

| ICT Development Index | | | | |
|---|---|---|---|---|
| **Economy** | **2011** | | **2010** | |
| | **Index** | **Rank** | **Index** | **Rank** |
| Korea (Rep.) | 8.56 | 1 | 8.45 | 1 |
| Sweden | 8.34 | 2 | 8.21 | 2 |
| Denmark | 8.29 | 3 | 8.01 | 3 |
| Japan | 7.76 | 8 | 7.57 | 8 |
| United Kingdom | 7.75 | 9 | 7.35 | 14 |
| **Singapore** | **7.66** | **12** | **7.47** | **10** |
| United States | 7.48 | 15 | 7.11 | 16 |
| France | 7.30 | 18 | 7.08 | 17 |
| Canada | 7.04 | 22 | 6.87 | 20 |
| Seychelles | 4.37 | 70 | 4.00 | 69 |
| Mauritius | 4.18 | 74 | 3.95 | 70 |
| Egypt | 3.66 | 83 | 3.44 | 81 |
| Tunisia | 3.58 | 85 | 3.42 | 83 |
| South Africa | 3.42 | 91 | 3.20 | 90 |
| Kenya | 2.32 | 114 | 2.07 | 114 |
| **India** | **2.10** | **119** | **1.98** | **116** |

**Source:** *Measuring the Information Society Report 2011 – International Telecommunication Union*

### 4.1 Networked Readiness Index 2012

The Global Information Technology Report which is issued on a yearly basis under World Economic Forum, in the latest 2012 edition, the eleventh in the series, features the latest results of the NRI, offering a snapshot of the state of networked readiness in the world. Under the general theme of Living in a Hyper connected World, the Report explores the central role of ICT in fostering economic, environmental, and social sustainability both as an industry in itself and in the overall economy and society.

The Networked Readiness Index (NRI) measures the propensity for countries to exploit the opportunities offered by information and communications technology. The NRI seeks to better comprehend the impact of ICT on the competitiveness of nations.

**Table 4**

| Network Readiness Index | | | | | | |
|---|---|---|---|---|---|---|
| **Country** | **2012** | | **2011** | | **2010** | |
| | **Index** | **Rank** | **Index** | **Rank** | **Index** | **Rank** |
| **Country** | **Index** | **Rank** | **Index** | **Rank** | **Index** | **Rank** |
| Sweden | 5.94 | 1 | 5.60 | 1 | 5.65 | 1 |
| **Singapore** | **5.86** | **2** | **5.59** | **2** | **5.64** | **2** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Finland | 5.81 | 3 | 5.43 | 3 | 5.44 | 6 |
| Denmark | 5.70 | 4 | 5.29 | 7 | 5.54 | 3 |
| Norway | 5.59 | 7 | 5.21 | 9 | 5.22 | 10 |
| United Kingdom | 5.50 | 10 | 5.12 | 15 | 5.17 | 13 |
| Taiwan, China | 5.48 | 11 | 5.30 | 6 | 5.20 | 11 |
| Korea (Rep.) | 5.47 | 12 | 5.19 | 10 | 5.14 | 15 |
| Qatar | 4.81 | 28 | 4.79 | 25 | 4.53 | 30 |
| **Malaysia** | **4.80** | **29** | **4.74** | **28** | **4.65** | **27** |
| United Arab Emirates | 4.77 | 30 | 4.80 | 24 | 4.85 | 23 |
| Lithuania | 4.66 | 31 | 4.20 | 42 | 4.12 | 41 |
| Tunisia | 4.12 | 50 | 4.35 | 35 | 4.22 | 39 |
| Mauritius | 4.06 | 53 | 4.03 | 47 | 3.89 | 53 |
| **India** | **3.89** | **69** | **4.03** | **48** | **4.09** | **43** |
| South Africa | 3.87 | 72 | 3.86 | 61 | 3.78 | 62 |
| Egypt | 3.77 | 79 | 3.76 | 74 | 3.67 | 70 |
| Cape Verde | 3.71 | 81 | 3.57 | 84 | - | - |

**Source:** *World Economic Forum – Global Technology Report 2011*

### 4.2 e-Government Development Index 2012

The E-Government Development Index (EGDI) is compiled every two years by the United Nations in their E-Government Survey. The EGDI is a composite indicator measuring the willingness and capacity of national administrations to use information and communication technology to deliver public services. The latest 2012 survey assesses the national portal of the 193 UN Member States as well as e-government policies and strategies applied in general and by specific sectors for delivery of essential services.

**Table 5**

| **Government Development Index** | | | | |
|---|---|---|---|---|
| **Country** | **2012** | | **2010** | |
| | **Index** | **Rank** | **Index** | **Rank** |
| Korea (Rep.) | 0.9283 | 1 | 0.8785 | 1 |
| **Singapore** | **0.8474** | **10** | **0.7476** | **11** |
| Australia | 0.8390 | 12 | 0.7863 | 8 |
| Bahrain | 0.6946 | 36 | 0.7363 | 13 |
| **Malaysia** | **0.6703** | **40** | **0.6101** | **32** |
| Oman | 0.5944 | 64 | 0.4576 | 82 |
| Trinidad & Tobago | 0.5731 | 67 | 0.4806 | 67 |
| Dominica | 0.5561 | 73 | 0.4149 | 105 |
| Seychelles | 0.5192 | 84 | 0.4179 | 104 |
| Mauritius | 0.5066 | 93 | 0.4645 | 77 |

| | | | | |
|---|---|---|---|---|
| South Africa | 0.4869 | 101 | 0.4306 | 97 |
| Tunisia | 0.4833 | 103 | 0.4826 | 66 |
| **India** | **0.3829** | **125** | **0.3567** | **119** |
| Bangladesh | 0.2991 | 150 | 0.3028 | 134 |

**Source:** *UN E-Government Survey 2012*

## CONCLUSION

Information and Communication Technologies (ICTs) play a key role in Development & Economic growth of the Developing countries of the World. Political, Cultural, Socio-economic Developmental & Behavioral decisions today rests on the ability to access, gather, analyze and utilize Information and Knowledge. Government of India is having an ambitious objective of transforming the citizen-government interaction at all levels to by the electronic mode by 2020.Similarly according to the Vision 2020-The Way Forward presented by His Excellency YAB Dato' Seri Dr Mahathir Mohamad at the Malaysian Business Council "By the year 2020, Malaysia can be a united nation, with a confident Malaysian society, infused by strong moral and ethical values, living in a society that is democratic, liberal and tolerant, caring, economically just and equitable, progressive and prosperous, and in full possession of an economy that is competitive, dynamic, robust and resilient". This paper presents a comparative study and review relating to e-Governance and application of ICT development between India & Malaysia.

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